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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,919	12/28/2001	Fabrice Devaux	Q67817	2835

7590 09/21/2005  
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2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037-3213

EXAMINER
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SILLS, THOMAS R

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/028,919	DEVAUX ET AL.	
	Examiner	Art Unit	
	Thomas Sills	2633	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-8 is/are rejected.
- 7) ☐ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/28/2001</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because there are multiple numberings for the same parts such as the number 5 in figure 1, the numbers 3, 4, and 6 in figure 2, and the numbers 3, 4, and 8 in figure 3. Use only one number to label each part. In addition, the y-axis of figure 4 should be more clearly labeled in a font that is easier to read. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because of grammatical errors. In line 1, “ad evices” should be “devices.” In addition, in the last line, “an automatically adaptation” is not grammatically proper or clear in its meaning. A suggested alternative is “automatic delay control.” Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: There are numerous grammatical errors within the specification. For example, the beginning of the sentence on page 1, line 25 is not grammatically correct. A suggested change would read: “The invention is also related to devices for the synchronization of data in an optical WDM transmission system...” On page 4, line 21, the figure being discussed is not stated. “Figure 2” should be incorporated to make clear which figure is being discussed. There are also many other numerous errors throughout the specification needing correction.

Appropriate correction is required.

### ***Claim Objections***

4. Claims 2 through 4 are objected to because of the following informalities: In claim 2, line 24, it is not clear that there is a “first” modulator, necessitating the need for a “second” modulator. Please clarify the first and second modulators. Also, the order of the second and third bullets is not logical, since the remodulated signal is monitored

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(second bullet) before the remodulating occurs (third bullet). Please change the order of the bullets or clarify these steps. Claim 3 is also not grammatically correct in the following places: page 1, line 38 and page 2, line 1 and lines 3-4. In claim 4, it is not clear which parts are being connected, as stated in line 7. Please clarify which parts are being connected.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams in view of Epworth.

With regards to claims 1 and 3, Adams discloses a method for adjusting delays between multiple channels of an optical WDM system including:

Demultiplexing the signals with demultiplexer 110, delaying the individual signals with phase controllers 111, and multiplexing the signals again with multiplexer 112, as described in column 2, lines 20-25.

Remodulating the multiplexed signal with modulator 107 and monitoring the remodulated signal with photodetector 118 via tap 105, as shown in figure 1.

Measuring and analyzing the photocurrent of the photodetector and adjusting the delays with electronic circuitry as described in column 2, lines 30-39 and 61-67, and column 3, lines 1-19.

However, Adams does not disclose a modulator with a clock signal of high frequency or a low frequency photodetector.

Epworth discloses a low frequency photodetector 31 monitoring the mean optical output power of a modulator 10 with a clock signal of high frequency, as described in column 2, lines 55-67, and column 3, line 67 through column 4, lines 1-3.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Adams the low frequency photodetector and high frequency modulator of Epworth. Adams provides motivation to monitor the average power of the remodulated signal in column 3, lines 50-53. Therefore it would have been obvious to use Epworth's low frequency photodetector in order to measure the average optical output power of the modulator. In addition, it would have been obvious to include a high frequency clock signal to provide a high frequency modulator for high data rates.

In regards to claim 2 and in view of the combination of Adams and Epworth above, Adams also includes a first and second modulators, 108 and 107 respectively, with a photodetector 118 monitoring the second modulator.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adams in view of Epworth, further in view of Doerr.

The combination of Adams and Epworth teaches all aspects of the invention but does not teach a demultiplexer and photodetector integrated into an AWG optical component.

Doerr teaches a demultiplexer 220 and photodetectors 230 that are integrated into an AWG optical device, as disclosed in column 3, lines 34-39 and 45-51. Doerr also teaches that the integration of these components has advantages such as ease of production and compactness in column 1, lines 29-33.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt Doerr's integration of a demultiplexer and photodetector in an AWG optical component to Adams and Epworth in order to benefit from the advantages of an AWG as referenced above.

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams in view of Epworth, further in view of Ishikawa.

With regards to claims 7 and 8, the combination of Adams and Epworth

teaches all aspects of the claimed invention, but does not disclose a regeneration device within a telecommunication system.

Ishikawa discloses a regenerator 22 that includes the means for bit synchronization 25 within an optical communication system with a transmitter 21 and receiver 23, as shown in figure 29 and disclosed in column 35, lines 31-52.

It would have been obvious to one of ordinary skill in the art at the at the time of the invention to substitute the combination of Adams and Epworth for the regenerator in Ishikawa in order to improve the bit synchronization, making it continuously adaptable with Adams and Epworth.

#### ***Allowable Subject Matter***

10. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Sills whose telephone number is 571-272-2813. The examiner can normally be reached on 8-5 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

J.D.  
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